

920476-904635

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the application of : D W Wiggins
Serial No. : 09/203,853
Filed : December 2, 1998
For : "Flow Control of Frame Based Data Over a
Synchronous Digital Network"
Examiner : Anh Vu H Ly
Art Unit : 2616
Customer number : 23644

DECLARATION OF CHRISTOPHER THOMAS WILLIAM RAMSDEN

Christopher Thomas William Ramsden declares as follows:

1. He is one of the inventors of the invention of the above-identified pending United States patent application.
2. The invention of the present application was prior to July 22, 1998. On July 22, 1998, the inventors made a disclosure of the present invention to their employer, Nortel Networks Limited, who is the assignee of the present application. That disclosure was provided under the reference ID1067, and a copy of that disclosure is appended hereto.
3. Following the disclosure appended hereto, filing of the present application was approved, the application was prepared, and was first filed with the United States Patent and Trademark Office on the date indicated above, December 2, 1998. As the Declaration for this application shows, he signed the Declaration for the application on November 3, 1998.

He further declares that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that the statements were made with the knowledge that wilful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such wilful false statements may jeopardize the validity of this application or any patent issued thereon.

Dated: 9/10/2007

C. Ramsden
Christopher Thomas William Ramsden

Invention Title

SDH LAN mapping flow control using pause frames

Correspondence will be directed to the first-named inventor only.

(1) Full legal name of first inventor (include middle initial)

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Residence and post office address if different

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Occupation
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Signature

Date

Citizen of
UK

(2) Name of supervisor or divisional head

David Barriskill

(5) Project Number

7539

Name of AVP Reported to:

Peter Schuddeboom

(6) Indicate your LOB

Broadband Networks

Signature

Date

If Advanced Technology, please indicate which group.

Please Make a Selection

Technical field

(3) Date of first written description

March 98

Key words for searching

SDH, SONET, Data, Ethernet, Frame Switching, Pause
Frame, Flow Control

Has this invention been discussed with others? If so, please complete.

Outside Nortel To Whom?
When?

Was there a Non-Disclosure Agreement in place?

Inside Nortel To Whom?
When?

Are you aware of any imminent future disclosures? Please detail.

(4) Which products will use this invention?

Saturn and TN1C

(7) Is the invention relevant to a Standards activity?

yes

If so give details:

This method of flow control in the Ethernet-SDH mapping
could probably be introduced into ETSI and ITU-T.

(8) Does this invention arise from any arrangement involving any external organization? no

Organization

Contract no.

TECHNICAL INFORMATION

(a) Brief description of the invention

In the ethernet to SDH/Sonet mapping process within the SDH LAN, where the ethernet rate is greater than the SDH rate,
an intermediate frame is used to provide a means of generating length to be used by the ethernet to the SDH frame.

an ethernet pause frame to provide a pause of appropriate length is returned by the mapper to the ethernet frame source in order to implement flow control to stop the ethernet frame receive buffer in the mapper from overflowing and losing frames.

(b) What is the problem solved by the invention?

This is a feature of the ethernet to SDH/Sonet mapping process and prevents the ethernet frame source from over-supplying the mapper with data for the designated SDH/Sonet rate and hence stops the loss of this excess data.

TECHNICAL INFORMATION (continued)

Page 2

(c) What other solutions have been tried and what were their shortcomings?

No. ID1067

This is a first implementation of the SDH LAN and mapping function, so this is the first implementation of flow control within that function.

(d) What are the specific elements or steps that solved the problem. Please provide high level details.

This is a subfunction of patent submission ref 0888 titled "Mapping in an SDH LAN" which in turn is a subfunction of patent submission ref 0882 titled "SDH LAN concept". Please read these 2 submissions before continuing. Consider the ethernet switch (full duplex)port which has to be mapped into an SDH container. If the ethernet port transmits data to the mapper at such a rate that the SDH channel cannot take it all, the receiving buffer in the mapper will start to fill. To ensure that this buffer will not overflow and so lose data, the mapper must send a pause frame back to the ethernet port to stop it transmitting data for an appropriate length of time, to let the mapper rx buffer empty to an appropriate level. The ethernet switch in turn will send pause frames upstream when its buffers fill to a specific level and so on upstream to the SDH LAN ingress points.

(e) What is the commercial value of the invention to Nortel and Nortel's major competitors? (see guidelines)

This is an essential part of the mapper - ref 0888 titled "Mapping in an SDH LAN" and its commercial value is as described there - ie
 " This invention addresses inter ISP data communications. It also covers data provision to SMEs. With small investment, this invention can have a fast time to market, and will address an extremely large market opportunity."

Nortel 36/9609

For further instructions, see "INVENTION DISCLOSURE SUBMISSION GUIDELINES"

page 3

Additional Inventors / Contractor Information

No. ID1067

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Agency worked for Non disclosure agreement with Nortel Please Make a Selection Exhibit B of the Master Services agreement with your agency Please Make a Selection	Please Make a Selection Please specify
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page 4

Additional Inventors / Contractor Information (continued)

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Exhibit B of the Master Services agreement with your agency Please Make a Selection					

(1) Full legal name of 7th inventor (include middle initial)				Residence address (and post office address if different)	
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Signature		Date		Citizen of	
Contractor Information				Any other agreement(s) with your agency. Please Make a Selection Please specify	
Agency worked for					
Non disclosure agreement with Nortel Please Make a Selection					
Exhibit B of the Master Services agreement with your agency Please Make a Selection					

(1) Full legal name of 8th inventor (include middle initial)				Residence address (and post office address if different)	
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Signature		Date		Occupation	Fax
Signature		Date		Citizen of	
Contractor Information				Any other agreement(s) with your agency. Please Make a Selection Please specify	
Agency worked for					
Non disclosure agreement with Nortel Please Make a Selection					
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Nortel 36